



## ABSTRACT / ZUSAMMENFASSUNG / ABREGE

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A position detection apparatus (10A,10B,10C) comprises a radiation source (11) mounted on an isolated reference frame (MF) and a two-dimensional detector (15) mounted adjacent said radiation source. The object (WT) whose position is to be detected has a retro-reflector (13) mounted on it so as to reflect light emitted from the radiation source along a return path (14) that is parallel to but displaced from the incident light path (12). The amount of displacement is dependent on the position of the object and is measured by the two-dimensional detector. Three such apparatus can be combined in a system to measure the position of the object in all six degrees of freedom.